

Catalogue of the Type Specimens of Amphibians and Reptiles in the Herpetological Museum of Chengdu Institute of Biology, Chinese Academy of Sciences: I. Rhacophoridae (Anura, Amphibia)

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Abstract In order to facilitate herpetological research for all the herpetologists both in and outside of China, we will report all the type specimens of amphibia and reptilia deposited in the Herpetological Museum of Chengdu Institute of Biology (CIB), Chinese Academy of Sciences in series. This report focuses on the family Rhacophoridae of Anura in Amphibia, including 13 species. The contents of the report include synonym lists and generic transfer of type species, measurements of type specimens, particularly for those with no previously published measurement data, and chromosomal data for each species.

Keywords catalogue, Rhacophoridae, taxonomy, type specimen

1. Introduction

Most early studies on systematics and taxonomy of amphibians and reptiles have relied primarily on morphological data (e. g., Boulenger, 1903; Channing, 1989; Duellman and Trueb, 1986; Fei, 1999; Inger, 1966; Jiang *et al.*, 1987; Liem, 1970; Wilkinson and Drewes, 2000). Recently, DNA sequences have been used for phylogenetic reconstruction of herpetology and provided a phylogenetic background for a revised classification (Frost *et al.*, 2006; Grosjean *et al.*, 2008; Li *et al.*, 2008; 2009; Richards and Moore, 1998; Wilkinson *et al.*, 2002; Yu *et al.*, 2008, 2009). Due to extensive homoplasy in both larvae and adults (Bossuyt and Milinkovitch, 2000; Stuart, 2008), some morphological taxonomic studies are not consistent with those based on molecular data, thus confounding species delimitations. The original descriptions of type specimens are very important to species identification. However, some descriptions of type specimens are very simple, which makes it difficult for

present research on taxonomy and diversity. In order to facilitate herpetological research for all the herpetologists both in and outside of China, we will report all the type specimens of amphibia and reptilia deposited in the Herpetological Museum of Chengdu Institute of Biology (CIB), Chinese Academy of Sciences in series. This report focuses on the family Rhacophoridae of Anura in Amphibia. The report includes three parts: 1) to state the synonym lists and generic transfer of type species; 2) to present the measurements of type specimens, particularly add those with no previously published measurement data; and 3) to provide chromosomal data for each species.

2. Synonymy Lists and Generic Transfer of the Type Species in Rhacophorids in the Museum

Classification of taxa mainly follows Fei *et al.* (2009), Frost (2011) and Li *et al.* (2008, 2009). Type specimens of thirteen species of rhacophorids are deposited in the Herpetological Museum of CIB. The details are provided as follows:

Genus *Rhacophorus*

Rhacophorus chenfui Liu, 1945

Rhacophorus chenfui was described as a new species by

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Liu in Journal of the West China Border Research Society, Ser. B, 1945, 15: 35.

Holotype: CIB 528 (Figure 2 A, B).

Type locality: Hui-ting-sze (Huidengsi), Mount Omei (Mount Emei), Szechwan (Sichuan), China.

Paratype: CIB 225.

Other deposited specimens: 149 collected specimens.

Distribution of all the deposited specimens: Mount Emei [CIB 217; CIB 川 (Sichuan) 527; CIB 629; CIB No.2; CIB No.57; CIB 56024; CIB 750022; CIB 570026; CIB 562025; CIB 562261; CIB 561581–561586; CIB 740463; CIB 98II1831–98II1833] (Figure 1, M), Hongya (CIB 101033; CIB 101100; CIB 101012–101019; CIB 101021–101025; CIB 101091–101099; CIB 940780–940785) (Figure 1, L), and Yingjing (CIB 740043; CIB 740111; CIB 740113; CIB 740135; CIB 740137; CIB 740175; CIB 740100–740104; CIB 740141–740144; CIB 740169–740173) (Figure 1, N) in Sichuan; Fengjie (CIB 116) (Figure 1, A) and Xiushan (CIB 595043; CIB 79II0147–79II0158; CIB 79II0210–79II0220; CIB 79II0242) (Figure 1, B) in Chongqing; Lichuan (CIB 74I0556–74I0559; CIB 74I0703; CIB 74I0705; CIB 74I0706; CIB 74I0787; CIB 74I0847; CIB 74I0883–74I0885; CIB 74I0887–74I0896; CIB 74I0898; CIB 74I0901; CIB 74I0902; CIB 74I0959; CIB 74I0961–74I0972; CIB 74I2074–74I2087) (Figure 1, I) in Hubei, and Dayaoshan (CIB 98II1834) (Figure 1, C) in Guangxi.

***Rhacophorus hungfuensis* Liu and Hu, 1961**

Rhacophorus hungfuensis was described as a new species by Liu and Hu in Tailless Amphibians of China, 1961, 269.

Holotype: CIB 570960 (Figure 3 A, B).

Type locality: Hongfoshan, Guanxian (now called Dujiangyan), Sichuan, China.

Paratype: No data.

Other deposited specimens: 116 collected specimens.

Distribution of all the deposited specimens: Dujiangyan (before called Guanxian) (CIB 70; CIB 79; CIB 610752; CIB 610754; CIB 610755; CIB 98II1836–98II1842; CIB 561229; CIB 561230; CIB 561388; CIB 570956–570959; CIB 570961; CIB 570964; CIB 570965; CIB 571108; CIB 571110–571112) (Figure 1, K) in Sichuan; and Dayaoshan (CIB 601231; CIB 601233–601235; CIB 601606–601608; CIB 601690; CIB 601691; CIB 601662; CIB 601663; CIB 601819–601829; CIB 601643; CIB 620017; CIB 620019–620026; CIB 620028–620038; CIB 620332; CIB 638009–638011; CIB 585162; CIB 585163; CIB 585165; CIB 585166; CIB 660387–660390; CIB 660393–660409; CIB 660411–660420; CIB 660423–660426; CIB 660428–660431) (Figure 1, C) in Guangxi.

***Rhacophorus nigropunctatus* Liu, Hu, and Yang, 1962**

The new species *Rhacophorus nigropunctatus* was published by Liu, Hu, and Yang in Acta Zoologica Sinica, 1962, 14: 388.

Holotype: CIB 590405 (Figure 4 A, B).

Type locality: Long-chu (Longjie), Weining, Guizhou, China.

Paratype: CIB 590404.

Other deposited specimens: 38 collected specimens.

Distribution of all the deposited specimens: Weining (CIB 590328; CIB 590453; CIB 590454; CIB 590700; CIB 590700A; CIB 590401–590403; CIB 590406–590413; CIB 590415–590421; CIB 590703–590707) (Figure 1, F), Leishan (CIB 63II0559; CIB 63II0454) (Figure 1, D), and Shuicheng (CIB 591148; CIB 591148A; CIB 591216; CIB 591340) (Figure 1, E) in Guizhou; and Longling (CIB 820476–820479) (Figure 1, U) in Yunnan.

Comments: Jiang *et al.* (1987) and Orlov *et al.* (2001) considered the species within the genus *Polypedates*. Rao *et al.* (2006) implied the species as *Rhacophorus*, which was confirmed by the molecular studies (Li *et al.*, 2008; 2009; Yu *et al.*, 2008, 2009).

***Rhacophorus rhodopus* Liu and Hu, 1959**

Rhacophorus rhodopus was published by Liu and Hu in Acta Zoologica Sinica, 1959, 11: 525.

Holotype: CIB 571171 (Figure 5 A, B).

Type locality: Mengyang, Yunnan, China.

Paratype: CIB 571176.

Other deposited specimens: 83 collected specimens.

Distribution of all the deposited specimens: Baoshan (CIB 423; CIB 427; CIB 431–439; CIB 444–446; CIB 493; CIB 494; CIB 564–572; CIB 574–576; CIB 609; CIB 610; CIB 613; CIB 614; CIB 617; CIB 651; CIB 653; CIB 654; CIB 656; CIB 657; CIB 659–661; CIB 706) (Figure 1, P), Hekou (CIB 584100; CIB 584101; CIB 584105–584110) (Figure 1, Q), Jingdong (CIB 581996; CIB 581997) (Figure 1, R), Jinghong (CIB 570739; CIB 570740; CIB 571169; CIB 571170; CIB 571172–571175; CIB 571177; CIB 571178; CIB 571181–571182; CIB 571187–571189; CIB 571191;) (Figure 1, S), and Longchuan (CIB 820563–820567; CIB 820572) (Figure 1, T) in Yunnan; Dayaoshan (CIB 602305; CIB 602306) (Figure 1, C) in Guangxi; and Lingshui (CIB 64III3303–64III3306; CIB 64III3327–64III3329) (Figure 1, G) in Hainan.

***Rhacophorus translineatus* Wu, 1977**

Rhacophorus translineatus was described as a new species by Wu from the Herpetology Department of Sichuan Institute of Biology (now CIB) by Fei *et al.* (1977) in Acta Zoologica Sinica, 1977, 23: 53.

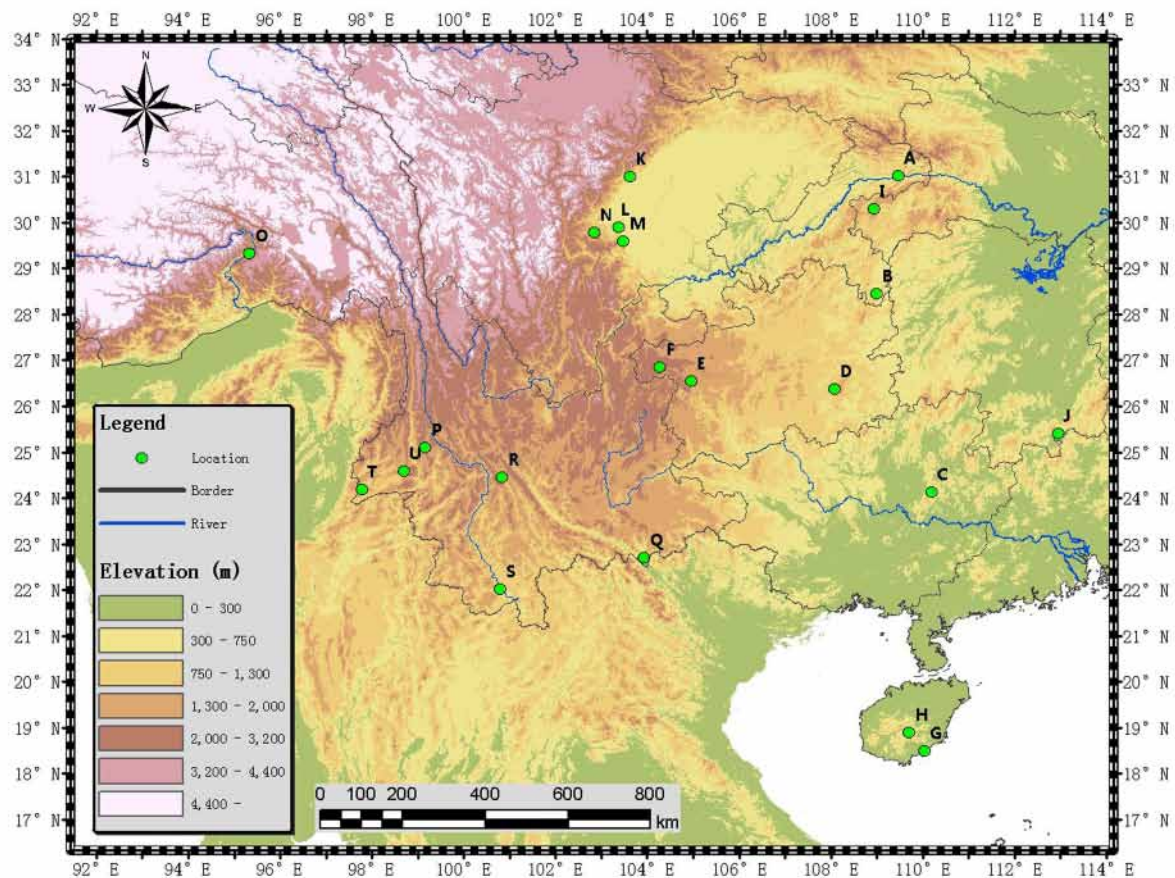


Figure 1 Location sites of samples. A. Fengjie, Chongqing; B. Xiushan, Chongqing; C. Jinxiu, Guangxi; D. Leishan, Guizhou; E. Shuicheng, Guizhou; F. Weining, Guizhou; G. Lingshui, Hainan; H. Qiongzong, Hainan; I. Lichuan, Hubei; J. Yizhang, Hunan; K. Dujiangyan (previously Guanxian), Sichuan; L. Hongya, Sichuan; M. Mount Omei (Mount Emei), Sichuan; N. Yingjing, Sichuan; O. Motuo, Xizang; P. Baoshan, Yunnan; Q. Hekou, Yunnan; R. Jingdong, Yunnan; S. Jinghong, Yunnan; T. Longchuan, Yunnan; U. Longling, Yunnan.

Holotype: CIB 73II0031 (Figure 6 A, B).

Type locality: Motuo, Xizang (= Tibet), China.

Paratype: No data.

Other deposited specimens: 14 collected specimens.

Distribution of all the deposited specimens: Motuo (CIB 73II0030; CIB 73II0032–73II0034 CIB 73II0037–73II0040; CIB 73II0040-1–73II0040-4; CIB 73II0080; CIB T8370151) (Figure 1, O) in Xizang, China.

***Rhacophorus yaoshanensis* Liu and Hu, 1962**

Rhacophorus yaoshanensis was described as a new species by Liu and Hu in *Acta Zoologica Sinica*, 1962, 14 (Suppl): 96–104.

Holotype: CIB 620016 (Figure 7 A, B).

Type locality: Lingban, Dayaoshan, Guangxi, China.

Paratype: CIB 620015.

Other deposited specimens: No collected specimen.

Distribution of the type specimen: Lingban, Dayaoshan (Figure 1, C) in Guangxi.

Genus *Kurixalus*

***Kurixalus odontotarsus* (Ye and Fei, 1993)**

Philautus odontotarsus was published by Ye, Fei, and Hu in *Rare and Economic Amphibian, China*, 1993, 318, 320.

Holotype: CIB 57311 (Figure 8 A, B).

Type locality: Laiyanghe, Mengla, Yunnan, China.

Paratype: CIB 57307, CIB 57310.

Other deposited specimens: 87 collected specimens.

Distribution of all the deposited specimens: Jinghong (CIB 57305; CIB57306; CIB 57308; CIB 57309; CIB 620800) (Figure 1, S) in Yunnan; Lingshui (CIB 64III1894–1897; CIB 64III1916; CIB 64III3299–3302; CIB 64III3330; CIB 64III3333–3335) (Figure 1, G) in Hainan; Dayaoshan (CIB 5; CIB 6; CIB 602309–602312; CIB 602314–602317; CIB 602374–602380; CIB 602397; CIB 602398; CIB 660385; CIB 63A9030) (Figure 1, C) in Guangxi; Motuo (CIB 73II0008; CIB 73II0022–73II0024; CIB 73II0053–73II0079) (Figure 1, O) in Xizang; and Yizhang

(CIB 75I1027) (Figure 1, J) in Hunan.

Comments: Bossuyt and Dubois (2001) considered *Philautus odontotarsus* within the subgenus *Philautus* in the genus *Philautus*. Delorme *et al.* (2005) erected a new genus *Aquixalus* based on the Vietnamese samples of *P. odontotarsus* as type species, and assigned it as the subgenus *Aquixalus* in the genus *Aquixalus*. Li *et al.* (2009) considered that the Vietnamese samples of *P. odontotarsus* were very different from the samples from the type locality and they might be misidentified. Thus, *Aquixalus* was invalid. According to the molecular results, Li *et al.* (2008) transferred *Philautus odontotarsus* into the genus *Kurixalus*, which was further confirmed by the study of Yu *et al.* (2010). However, this result has not been widely accepted, for example Fei *et al.* (2009, 2010) considered *Kurixalus odontotarsus* as *Aquixalus odontotarsus*.

Genus *Theloderma*

Theloderma asperum (Boulenger, 1886)

Philautus albopunctatus Liu and Hu, 1962 was described as a new species and published in *Acta Zoologica Sinica*, 1962, 14 (Suppl): 73, 99–104.

Holotype: CIB 601686 (Figure 9 A, B).

Type locality: Yangliuchung, Dayaoshan, Guangxi, China.
Paratype: No data.

Other deposited specimens: No collected specimen.

Distribution of the type specimen: Yangliuchung, Dayaoshan (Figure 1, C) in Guangxi.

Comments: Bossuyt and Dubois (2001) considered *Philautus albopunctatus* within the subgenus *Philautus* in the genus *Philautus*. Fei *et al.* (2009, 2010) transferred this species into *Aquixalus*. According to the molecular studies, it was considered as a synonymy of *Theloderma asperum* by the studies of Yu *et al.* (2007, 2008).

Theloderma kwangsiense Liu and Hu, 1962

Rhacophorus leprosus kwangsiensis was firstly described as a subspecies by Liu and Hu in *Acta Zoologica Sinica*, 1962, 14 (Suppl): 92–104.

Holotype: CIB 601687 (Figure 10 A, B).

Type locality: Yangliuchung, Dayaoshan, Guangxi, China.
Paratype: No data.

Other deposited specimens: 1 collected specimen.

Distribution of the deposited specimen: Yangliuchung, Dayaoshan (CIB 601713) (Figure 1, C) in Guangxi.

Comments: Orlov *et al.* (2006) considered this subspecies *Rhacophorus leprosus kwangsiensis* as full species rank. Fei *et al.* (1990, 2009, 2010), and Zhao and Adler (1993) assigned *Rhacophorus kwangsiensis* into *Theloderma* as *T. kwangsiensis*.

Theloderma rhododiscus (Liu and Hu, 1962)

Philautus rhododiscus was originally published by Liu and Hu in *Acta Zoologica Sinica*, 1962, 14 (Suppl): 73, 98–104.

Holotype: CIB 601818 (Figure 11 A, B).

Type locality: Yangliuchung, Dayaoshan, Guangxi, China.
Paratype: No data.

Other deposited specimens: 18 collected specimens.

Distribution of all the deposited specimens: Dayaoshan (CIB 602120; CIB 64005; CIB 660432–660438; CIB 601880; CIB 640047–640054) (Figure 1, C) in Guangxi.

Comments: Bossuyt and Dubois (2001) assigned *Philautus rhododiscus* into the subgenus *Philautus* in the genus *Philautus*. Yu *et al.* (2007, 2008) transferred *Philautus rhododiscus* into *Theloderma* according to its molecular phylogeny.

Genus *Gracixalus*

Gracixalus jinxiuensis (Hu, 1978)

Philautus jinxiuensis (Hu, 1978), published by Hu in *Materials of Herpetology Research*, 1978, 4: 20.

Holotype: CIB 660386 (Figure 12 A, B).

Type locality: Dayaoshan, Jinxiu, Guangxi, China.

Paratype: No data.

Other deposited specimens: No collected specimen.

Distribution of the type specimen: Dayaoshan, Jinxiu (Figure 1, C) in Guangxi.

Comments: It was redescribed by Hu and Tian in *Acta Zoologica Sinica*, Chengdu, 1981, 5 (17): 116. Bossuyt and Dubois (2001) considered *Philautus jinxiuensis* within the subgenus *Philautus* in the genus *Philautus*. Delorme *et al.* (2005) erected a new genus *Aquixalus*, including two subgenera *Aquixalus* and *Gracixalus*. Li *et al.* (2008) raised the subgenus *Gracixalus* to full genus rank. Fei *et al.* (2009, 2010) transferred this species into *Aquixalus*. However, Yu *et al.* (2009) transferred *Philautus jinxiuensis* into the genus *Gracixalus* based on its molecular phylogeny.

Gracixalus medogensis (Ye and Hu, 1984)

Philautus medogensis was described by Ye and Hu in *Acta Zoologica Sinica*, 1984, 3: 67–69.

Holotype: CIB 73II0051 (Figure 13 A, B).

Type locality: Xigonghu, Motuo, Xizang, China.

Paratype: No data.

Other deposited specimen: No collected specimen.

Distribution of the type specimen: Xigonghu, Motuo (Figure 1, O) in Xizang, China.

Comments: Bossuyt and Dubois (2001) considered *Philautus medogensis* within the subgenus *Philautus* in the genus *Philautus*. Fei *et al.* (2009, 2010) transferred

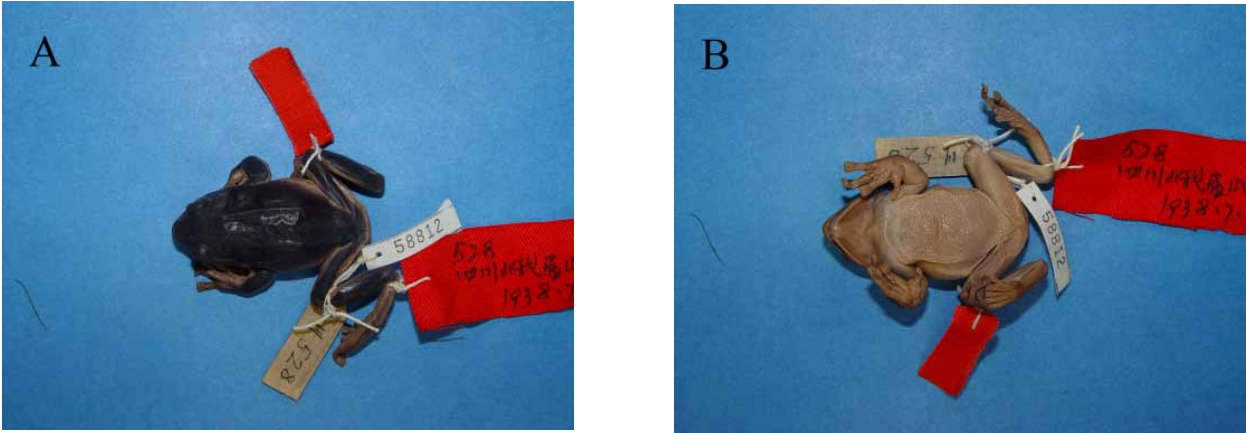


Figure 2 Dorsal (A) and ventral (B) views of the holotype of *Rhacophorus chenfui*.

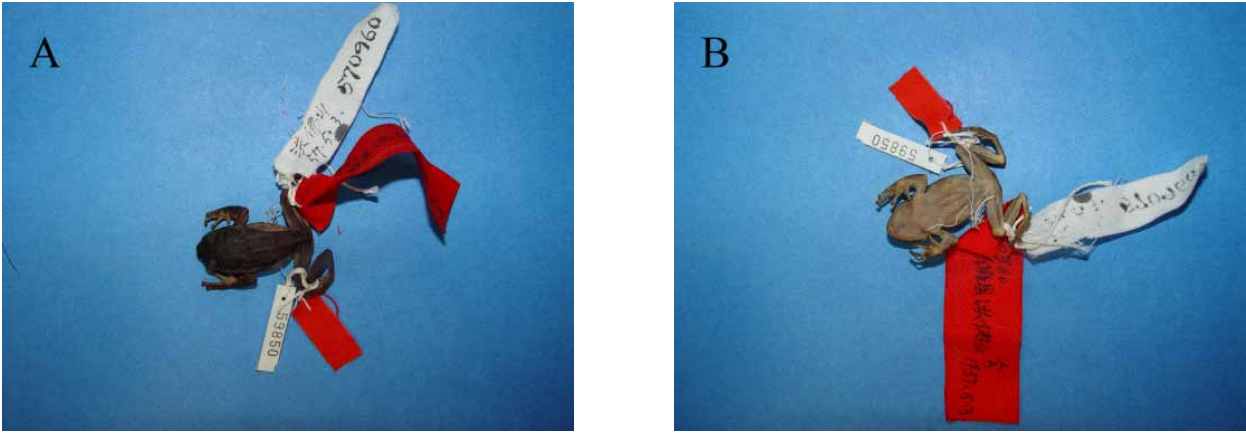


Figure 3 Dorsal (A) and ventral (B) views of the holotype of *Rhacophorus hungfuensis*.

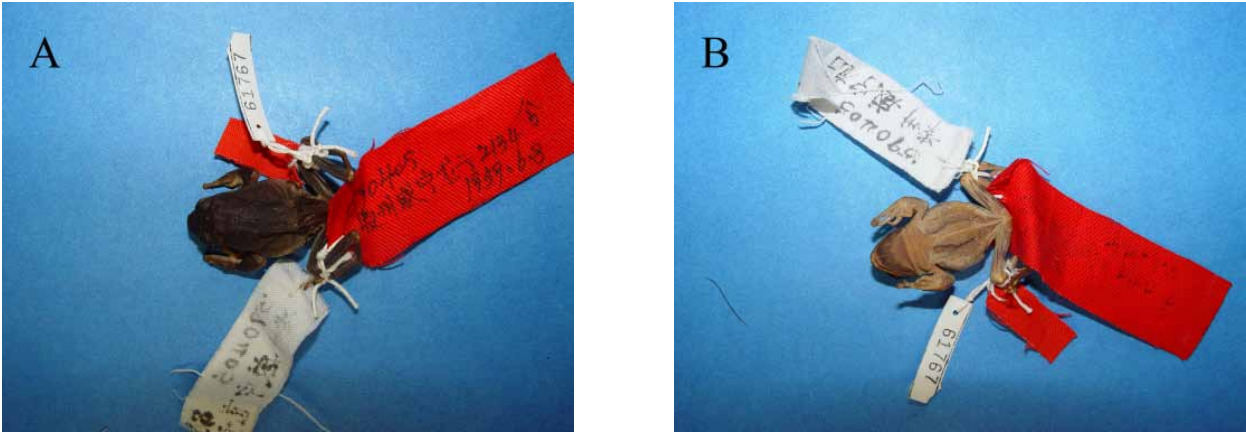


Figure 4 Dorsal (A) and ventral (B) views of the holotype of *Rhacophorus nigropunctatus*.

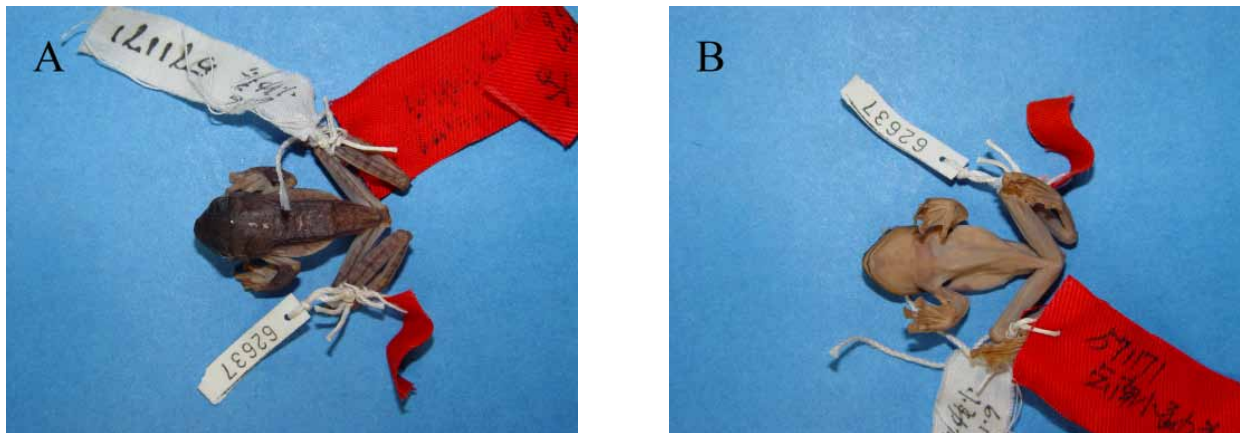


Figure 5 Dorsal (A) and ventral (B) views of the holotype of *Rhacophorus rhodopus*.

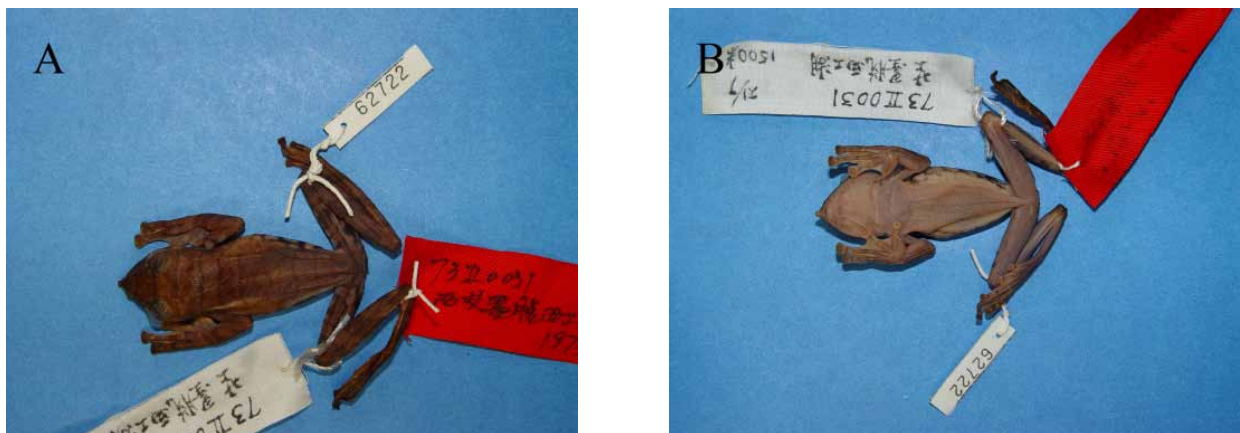


Figure 6 Dorsal (A) and ventral (B) views of the holotype of *Rhacophorus translineatus*.

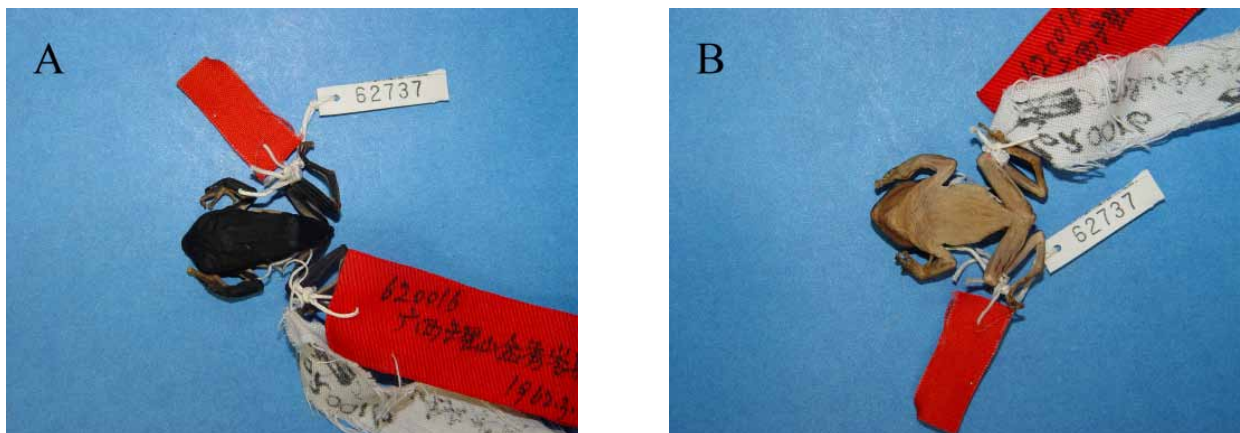


Figure 7 Dorsal (A) and ventral (B) views of the holotype of *Rhacophorus yaoshanensis*.

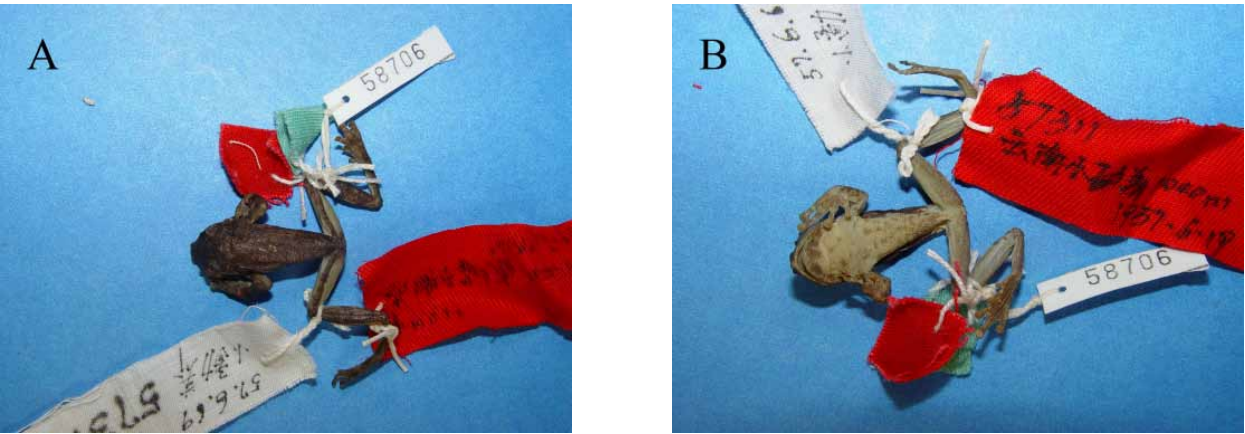


Figure 8 Dorsal (A) and ventral (B) views of the holotype of *Philautus odontotarsus*.

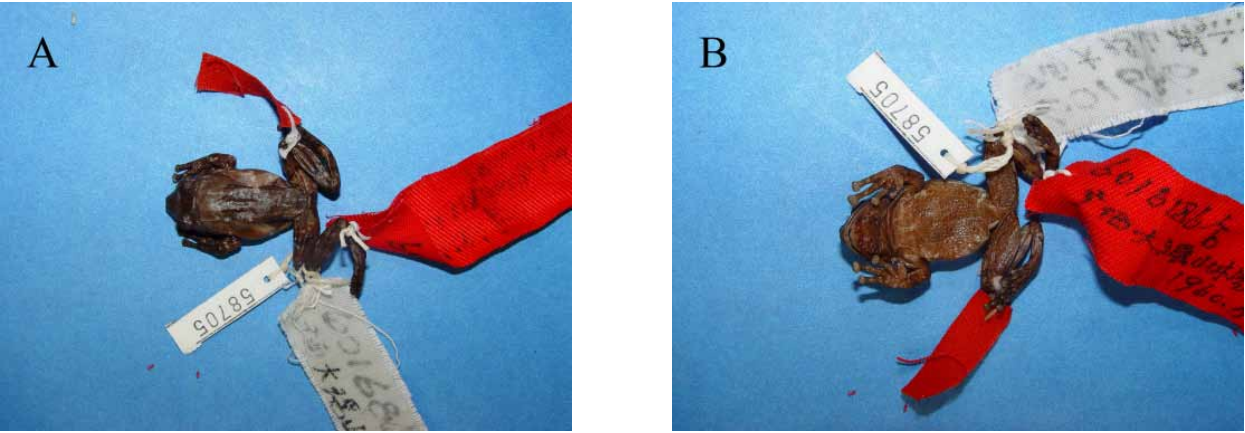


Figure 9 Dorsal (A) and ventral (B) views of the holotype of *hilautus albopunctatus*.

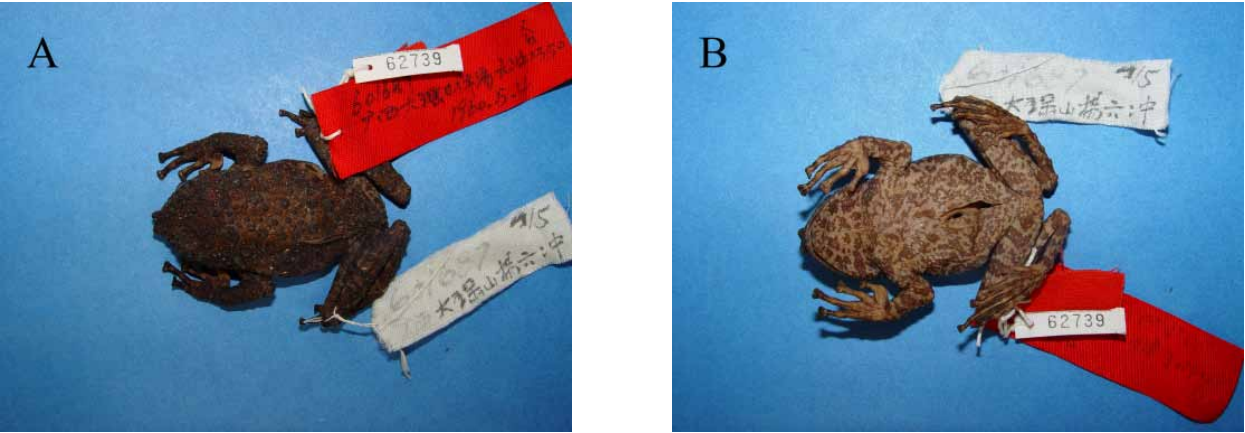


Figure 10 Dorsal (A) and ventral (B) views of the holotype of *Rhacophorus kwangsiensis*.

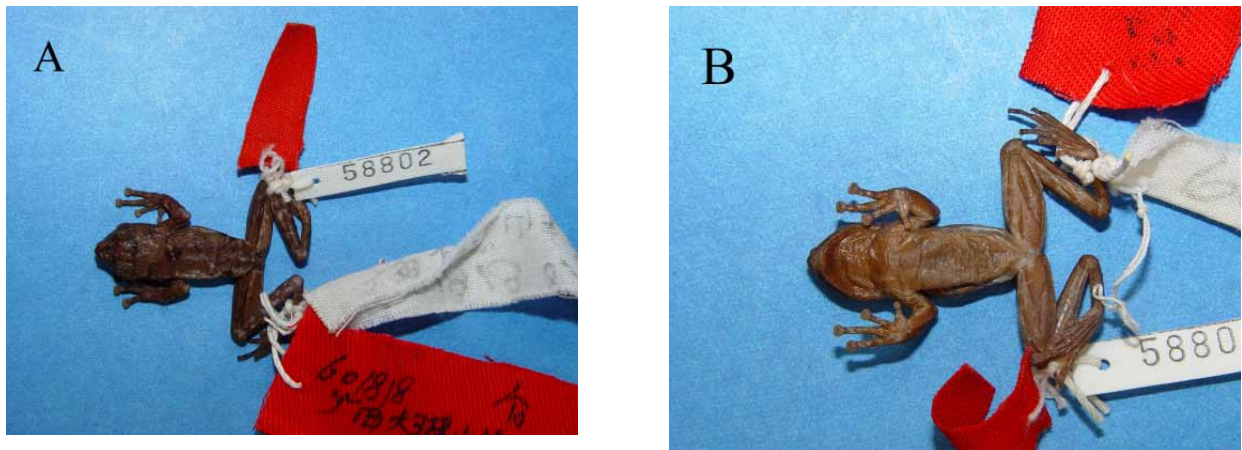


Figure 11 Dorsal (A) and ventral (B) views of the holotype of *Philautus rhododiscus*.

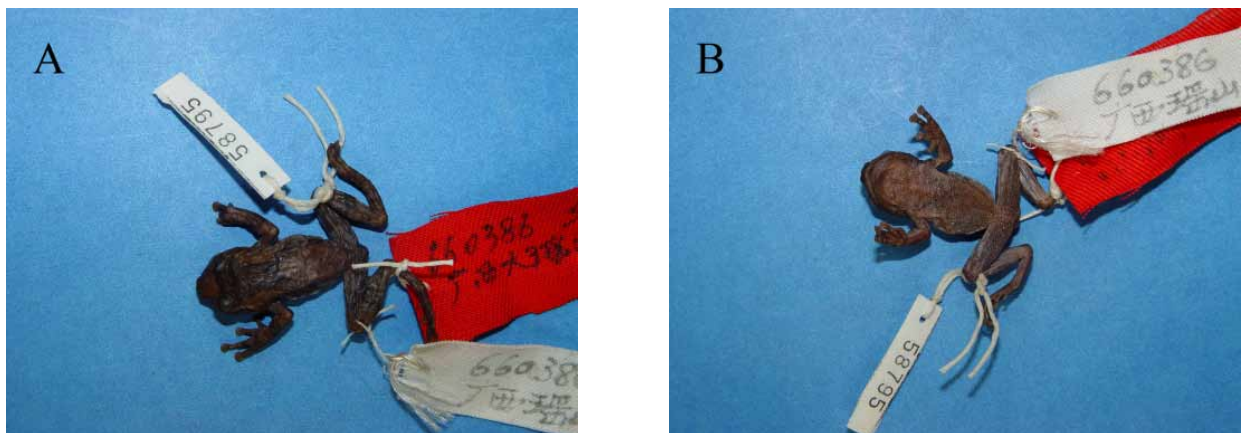


Figure 12 Dorsal (A) and ventral (B) views of the holotype of *Philautus jinxiuensis*.

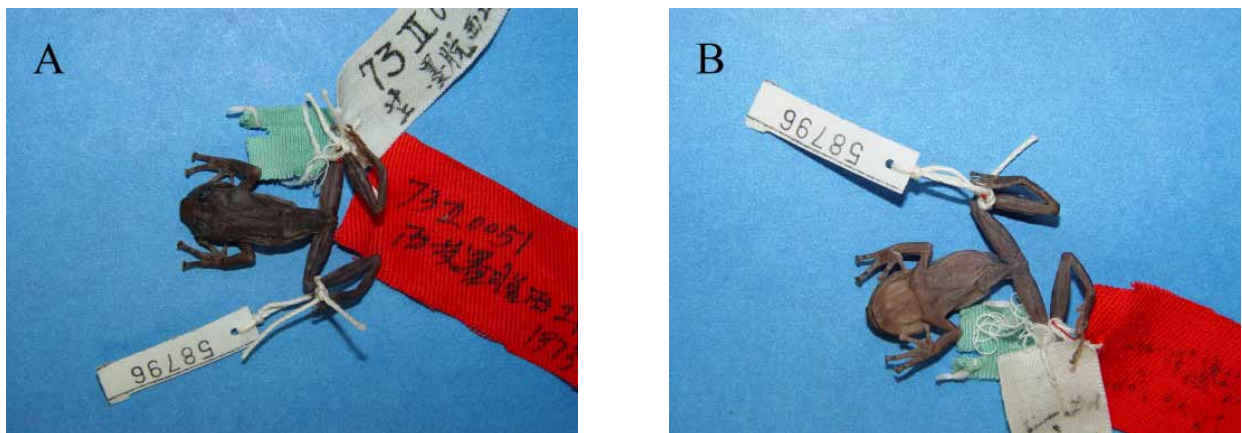


Figure 13 Dorsal (A) and ventral (B) views of the holotype of *Philautus medogensis*.

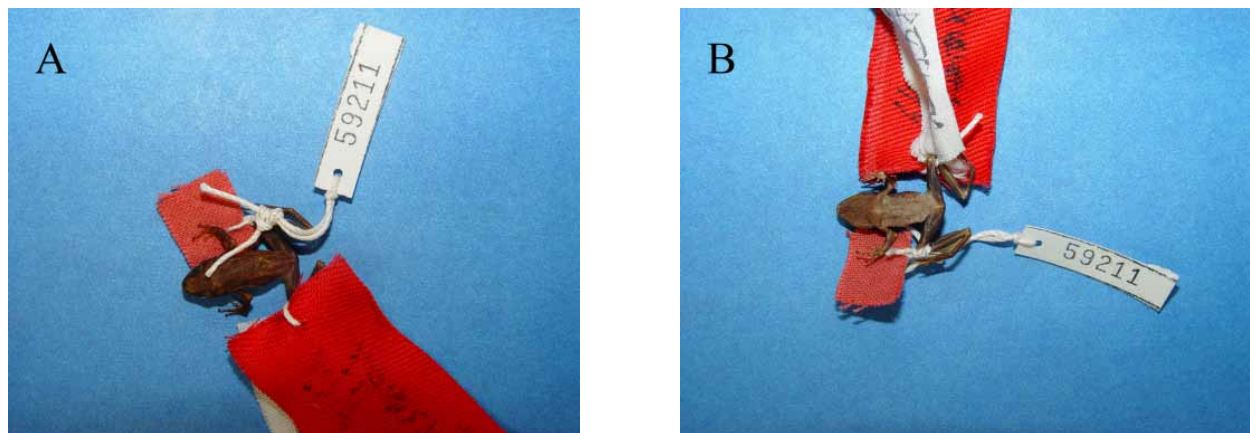


Figure 14 Dorsal (A) and ventral (B) views of the holotype of *Philautus ocellatus*.

All the photos above were taken by Zhijun LIU from CIB.

this species into *Aquixalus*. Due to the similarity with *G. jinxiuensis*, Li *et al.* (2009) transferred *P. medogensis* into the genus *Gracixalus*.

Genus *Liuixalus*

Liuixalus ocellatus (Liu and Hu, 1973)

Philautus ocellatus was published by Liu, Hu, Fei and Huang in Acta Zoologica Sinica, 1973, 19: 385–393.

Holotype: CIB 64III1371 (Figure 14 A, B).

Type locality: Mount Wuzhi, Hainan, China.

Paratype: CIB 64III1370.

Other deposited specimens: 4 collected specimens.

Distribution of all the deposited specimens: Mount Wuzhi, Qiongzong (CIB 64III1369; CIB 64III1372; CIB 64III1374) (Figure 1, H); and Lingshui (CIB 64III3227) (Figure 1, G) in Hainan.

Comments: Bossuyt and Dubois (2001) considered *Philautus medogensis* within the subgenus *Philautus* in the genus *Philautus*. Fei *et al.* (2009, 2010) transferred this species into *Aquixalus*. According to the molecular studies, Li *et al.* (2009) transferred *Philautus ocellatus* into the genus *Liuixalus*.

3. Measurements of Type Specimens, Including Those with No Previously Published Measurement Data

We listed the measurements for type specimens and particularly added those with no previously published measurement data (Tables 1, 2, 3). As for *R. chenfu*, Liu (1945) did not provide the measurements for the holotype but did provide data for the type series specimens (Table

Table 1 The newly made and added measurements of one type specimen of *Rhacophorus translineatus*

Measurements (In mm)	<i>Rhacophorus translineatus</i> CIB 73II0031	<i>Rhacophorus zhaojuensis</i> CIB 6883
SVL	54.68	41.97
HL	18.10	14.47
HW	16.38	15.33
IND	5.04	4.97
IOD	5.57	4.59
SL	9.75	7.14
ED	5.57	5.26
TD	1.91	2.03
DNE	4.46	3.04
FLL	26.28	24.26
HLT	18.11	15.51
THL	23.54	20.03
TIL	26.68	17.84
FTL	62.33	43.23
FL	25.61	21.08
FL1	9.71	8.05
FL2	12.42	11.95
FL3	17.35	15.93
FL4	15.67	14.17
3FW	3.78	2.73
3FL	2.94	1.97
TL1	10.61	8.62
TL2	14.01	12.11
TL3	20.35	16.37
TL4	25.56	21.07
TL5	21.85	8.62

3). Measurements were taken to the nearest 0.01 mm with digital calipers and contained the followed characters: SVL: Snout-vent length (from tip of snout to vent); HL: Head length (from tip of snout to the hind border of the angle of the jaw, and not measured parallel with

Table 3 The measurements of type series *Rhacophorus chenfui* specimens by Liu (1945)

Characters (In mm)		<i>R. chenfui</i>	
		♀ (n = 4)	♂ (n = 8)
Body length snout to vent	Range	48–55	35–38
	Average	49.7	36.9
Head length angle of jaw to tip of snout	Range	17–19	12–13.5
	Average	17.5	12.9
Head width posterior region of eye	Range	17–19	12.2–13.8
	Average	18	13
Snout anterior border of eye to nostril	Range	3.6–4.8	2.4–3.2
	Average	4	2.8
Snout nostril to tip of snout	Range	3.8–5.2	3–3.5
	Average	4.2	3.2
Internasal space	Range	5–6	4–4.6
	Average	5.5	4.4
Interorbital space	Range	5.7–6.5	4.6–5
	Average	6	4.8
Width of eyelid	Range	3.7–4.5	3–3.5
	Average	4	3.2
Length of eye	Range	5–6	4.2–5
	Average	5.4	4.5
Tympanum	Range	2.5–3	2–2.5
	Average	2.8	2.2
Upper arm armpit to elbow	Range	6.5–8	5–6.5
	Average	7.1	5.4
Lower arm elbow to finger tip	Range	10–12	7–8
	Average	10.8	7.7
Length of palm & 3rd finger	Range	15–17	10.5–12
	Average	15.9	11.2
Length of 3rd finger	Range	10–11	7–8
	Average	10.8	7.6
Length of disc of 3rd finger	Range	2.4–3	1.8–2.4
	Average	2.7	2
Foot and tarsus	Range	32–35	23–25
	Average	33.7	23.5
Diameter of lower arm	Range	3.5–5	3.2–3.8
	Average	4.6	3.7
Hind limb vent to tip of longest toe	Range	66–75	48–54
	Average	71	50.1
Length of tibia	Range	21–23	15–17
	Average	22	15.9
Length of intermetatarsal tubercle	Range	2.3–2.8	1.5–2
	Average	2.5	1.8
4th toe intermetatarsal tubercle to tip of toe	Range	21–23	15–17
	Average	22.1	16
4TL	Range	2–2.7	1.4–2
	Average	2.3	1.7

IND: Internarial distance (distance between nares); IOD: Interorbital distance (minimum distance between upper eyelids); SL: Snout length (from anterior border of eye to tip of snout); ED: Eye diameter; WE: Width of eyelid; TD: Tympanum diameter (the greatest diameter); DNE: Distance from nostril to eye; FLL: Forelimb length (from elbow to tip of third finger); HLT: Hand length (from base of outer palmer tubercle to tip of finger III); DLA: Diameter of lower arm; THL: Thigh length (from vent to knee); TIL: Tibia length (from knee to foot); TIW: Tibia width; HLL: Hind limb length (from vent to tip of longest toe); FTL: Length of foot and tarsus; FL: Foot length (from proximal end of inner metatarsal tubercle to tip of toe IV); FL_{1–4}: Length of fingers I–IV; TL_{1–5}: Length of toes I–V; 3FW: Width of disc of finger III; 4TL: Length of disc of toe IV, and 3FL: Length of disc of finger III.

4. Chromosomal Data for Each Specimen

The diploid complement of *Kurixalus odontotarsus* from Hekou, Yunnan consists of 26 chromosomes, with 5 large and 8 small pairs. Nos. 2, 3, 4 and 8 are submetacentric (SM) chromosomes, and the remaining are metacentric (M) chromosomes. Two positions of Ag-NORs are observed near the centromere of long arm of No.7 and terminal of short arm of No. 8 (Rao and Yang, 1996).

Rhacophorus rhodopus from Xishuangbanna, Yunnan is $2n = 26$, with 5 large, 1 middle and 7 small pairs. Nos. 2, 3, 5, 10 are SM chromosomes and the rest are M chromosomes. No secondary constrictions are found (Rao and Yang, 1996).

The diploid number of *Rhacophorus chenfui* from Mount Emei, Sichuan is $2n = 26$, consisting of 5 large and 8 pairs of small chromosomes. The secondary constriction appears at the terminal of the long arm of chromosome No. 11. Chromosome C-banding shows that the heterochromatins of *R. chenfui* are located in the centromeric and pericentromeric regions, and the secondary constriction is C- banding negatively stained. It is peculiar for *R. chenfui* having 7 pairs of SM (Nos. 2, 3, 4, 6, 11, 12, 13) chromosomes and so many interstitial C-bands (Tan *et al.*, 1987).

Rhacophorus nigropunctatus from Zhongshan, Guizhou has $2n = 26 = 22m + 4sm$ (5 + 8), with 5 large and 8 small pairs. The secondary constrictions have been observed in the arm of chromosome Nos. 8, 10. An Ag-NOR is located on the secondary constriction of the short arm No.10 (Sun *et al.*, 2007).

There is no chromosomal data reported for the

the median line); HW: Head width (at angle of jaw);

following type species: *Rhacophorus yaoshanensis*, *Rhacophorus translineatus*, *Theloderma kwangsiense*, *Theloderma asperum*, *Gracixalus jinxiuensis*, *Gracixalus medogensis*, *Liuxalus ocellatus*, *Rhacophorus hungfuensis* and *Theloderma rhododiscus*.

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